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NOVEMBER 3.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-six members present.

A paper entitled "On new species of Noctuidæ," by Aug. R. Grote, was presented for publication.

The President read the following extract from a letter written by Prof. Edw. D. Cope, and dated "Camp near Nacimiento, N. M., Oct. 11, 1874:" "I have been camped for some five weeks in this region with five men, forming one of Lieut. Wheeler's surveying parties. I find much of interest geologically, paleontologically, and archæologically, and have an agreeable location in a country with good water, timber, and grass, and, I may add, Indians. The latter are Apaches, Utes, and Navajoes, all friendly. I find many remarkable ruins of rude stone buildings of an extinct race, with great quantities of broken pottery. I discovered a ruined stone village of twenty-five houses arranged on the edge of a cretaceous sandstone hog-back, from six to twelve feet wide only, and 250 to 300 feet perpendicular on one side, and on the other sloping at an angle of 45° to 60° , besides other ruins in regions now entirely waterless."

Dr. F. V. Hayden exhibited a series of photographs of ruins similar in character to those spoken of by Prof. Cope. The builders were supposed to be the ancestors of the Moquis.

Wheat and Chess.—The specimen of wheat (*Triticum*) with a head of cheat (*Bromus*) apparently growing from a joint of the former plant, which had been presented to the Academy at the meeting of Oct. 6, having been referred to Dr. J. GIBBONS HUNT for examination, he made the following report:—

After rendering the chaff of both plants transparent, and tinting properly, so as to render every morphological element distinct for study, and after treating the doubtful outgrowth similarly, I present the three specimens to the members for study.

I will call attention to only a few points of structure in each. In the upper glume of the wheat, on the inside surface against which the grain lies, the cells are large, and are bounded at their *ends* by cell-walls nearly *transverse* to the long diameter of the cells. In corresponding cells in cheat the ends of the cells are bounded by *oblique* lines generally. In the outer or epidermal cells of both plants silica is abundant, the deposit occurring at the *ends* of the

cells, but in granules differently formed in the wheat, from those in the cheat.

It is impossible to convey in words, an idea of this difference in form. In the cheat the silica granules are larger and more abundant than in wheat.

In the upper glumes of both plants there are from three to nine veins. In the wheat not more than *one* vein is bordered with stomata, in cheat *every vein* has on either side a distinct row of large stomata, and this peculiarity of structure is so distinctive that the botanist can pick from a bushel of the mixed glumes of both plants, all that belong to the cheat, without possibility of mistake. Other points of dissimilarity are obvious, but I have stated enough to make a comparison with the doubtful outgrowth.

In this doubtful outgrowth from the head of wheat I find the obliquely ending internal cells in the upper glume, in the epidermal cells, silica deposits identical in form and position with the cheat, and unlike the wheat, and every vein is bordered with a row of stomata on either side. Every morphological element of the outgrowth corresponds in form to analogous elements in the cheat. I am compelled therefore to pronounce it undoubted *Bromus* and not *Triticum*. But I would report further.

Seize now, very gently, this remarkable outgrowth, with delicate forceps, and out comes the *Bromus* from the *Triticum*, and the trick is exposed. The *Bromus* has been introduced into the *Triticum* artificially, and the cement employed to make the deception more secure still adheres in flakes to the artificial parasite, and resembles in appearances gum tragacanth. A beautiful fungus, moreover, has found a nidus in the gum solution while fresh, and is not found elsewhere on the wheat. The stem of the *Bromus* which was inserted into the wheat, bears on its epidermal surface minute outgrowths resembling precisely those on the corresponding parts of the plant which is separate from the wheat. Now, on *naturally* internal surfaces such epidermic outgrowths never occur; I have no hesitation, therefore, in pronouncing this specimen *cheat*, neither do I think the workman has been expert in his manipulation.

NOVEMBER 10.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-six members present.

A paper entitled "Description of a new species of *Helminthophaga*," by Harold Herrick, was presented for publication.

Mountain Drainage of Eastern Tennessee and Western North Carolina. Ancient Burial Custom.—JOSEPH WILLCOX made some statements in reference to the drainage of the mountain region of